Upper GI Surgery

Phone: **02 9553 1120**
Fax: **02 9553 7526**
Email: **info@uppergisurgery.com.au**
Web: **www.uppergisurgery.com.au**

Endoscopic Bariatrics, Endoscopic Sleeve Gastroplasty (ESG) and Incisionless Bariatric Surgery

Suite 3, Level 5
St George Private Hospital
1 South Street
KOGARAH NSW 2217
Provider: 206140KL

Specialist Suites
60-62 McNamara St
ORANGE NSW 2800
Provider: 206140UF

St. Vincent's Clinic
Suite 505, Level 5
438 Victoria Street
DARLINGHURST NSW 2010
Provider: 4861844K

Illawarra Family
Medical Centre
338–340 Crown St
WOLLONGONG NSW 2500
Provider: 206140QX

About the author

Associate Professor Michael Talbot started working as a consultant upper gastrointestinal surgeon in 2003, having completed 10 years of training following his internship in 1992–93. He started performing gastric band and gastric bypass surgery in 2003, and in 2004 was one of the first in Australia to perform sleeve gastrectomy and laparoscopic gastric bypass. Since then he has developed a large practice in bariatric and complex upper gastrointestinal surgery.

The surgical practice he works in is one of few in Australia regularly performing gastric band, bypass, sleeve gastrectomy, endoscopic sleeve gastroplasty and revision/corrective surgery for all procedures.

The practice also offers expertise in gallbladder and hernia surgery, repair of complex abdominal wall defects, endoscopic management of gallstones (ERCP), endoscopic oesophageal and gastric tumour therapy and state-of-the-art Barrett's oesophagus treatments. We have a specialised laboratory for the investigation of complex swallowing disorders and reflux, and are involved extensively in research.

We work with other doctors and health professionals as part of an interdisciplinary team to create a work environment focused on patient care, innovation and excellence. It is clear that patients do best when they have a range of people helping to look after them. This booklet is a document that will change over time as we learn more from our patients and from each other.

Dr Gary Yee

Dr Jason Maani

Dr Jennifer Matthei

Essential information about this booklet

This booklet is intended to explain the Endoscopic Sleeve Gastroplasty (or ESG) procedure and any issues that you may have before and after the operation. It is not supposed to replace advice given by your doctor or other healthcare professionals, but rather to add to it.

If you have any questions or worries that you wish to discuss with your doctor, please write them down in the space provided. It is important that you understand as much as possible before and after the operation, to aid your weight loss and ensure a healthy lifestyle.

Endoscopic Bariatric Therapies (EBT)

Bariatric (weight-loss) procedures work by changing the function of the stomach, which leads to changes in how patients experience hunger and how they eat.

In order for someone to lose a lot of weight and keep it off they need to move from an ‘energy excess’ diet to one that sees them using body fat for fuel rather than the food they are eating. Bariatric procedures reduce hunger and reduce the amount of food that people can comfortably eat during a meal, and when this is combined with a move to meals that avoid excess energy and carbohydrates patients are able to lose weight without following a specific diet and without being hungry.

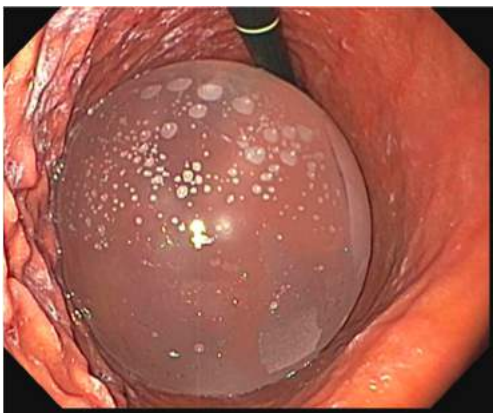
While the majority of Bariatric procedures are performed laparoscopically, it is possible to alter the function of the stomach using endoscopes. In these procedures a flexible endoscope is passed through the mouth(with the patient asleep) into the stomach and sometimes into the intestines beyond the stomach. Some of these procedures are temporary, and some are designed to have a more permanent effect.

While there is often the assumption that an endoscopic is safer than a surgical one, this is not the case. Most of the benefits and risks relate to what you actually do to the stomach, not how you do it.

The first endoscopic bariatric procedure was the intragastric balloon, introduced during the 1980’s. There have been multiple endoscopic balloons and other devices created in the decades since then, and while the large majority have not lived up to the expectations and hopes of patients and their doctors it does seem that improvements in our understanding about obesity and technology improvements has led us to the point where EBT may soon be able to be offered to patients as a safe and effective therapy.

This booklet is designed to discuss some of the currently available endoscopic bariatric therapies. It can’t be used to replace medical advice to you by a trained Doctor, because everyone’s circumstances and requirements are different. We are happy to discuss procedures not listed in this Booklet. EBT is a rapidly evolving field, so our understanding of procedures changes over time.

Intragastric Balloon



There are several different intra-gastric balloon devices available. They can be left in the stomach for 6-12 months. They have two mechanisms of action

1) Filling the stomach, so that patients feel that there is something already there when they start eating.
2) Partially paralyzing the stomach so it fails to empty well. This means that food and liquids that patients eat tend to stay in the stomach longer which supresses appetite and often makes patients feel that small meals have the same effect as a large meal.

While placing the balloon is very simple and safe, it's very hard to predict what effects it will have from person to person. The 'space occupying' effect of an intra-gastric balloon has less effect over time on how much a patient can eat than the effect on gastric emptying. The stomach can get used to the device so eating a meal when you already have 600 ml of space taken up by the balloon seems to have little effect, but if the stomach fails to empty well then even fluids can fill you up for hours.

Results. 2-3% of patients fail to tolerate the device and need it removed within a few days as they cannot drink enough to maintain their health. The average weight loss is about 10% of the patients start weight, but once the device is removed it is common for patients to experience weight gain when their gastric function returns to normal. About 1 in 4 will maintain significant weight loss two years after the procedure, related to lifestyle changes adopted while the device was placed.

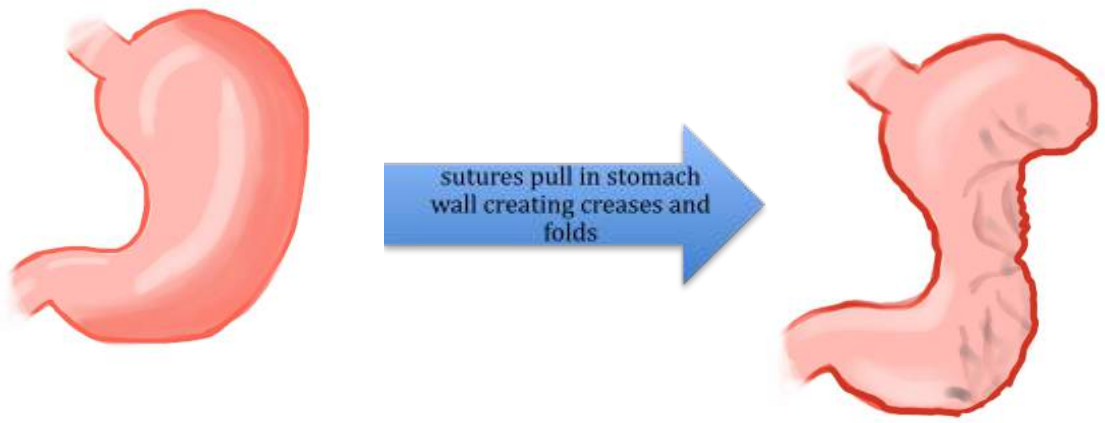
Severe complications related to gastric ulceration, vomiting and gastric injury are rare (under 1:1000). While the balloon is in place it is common for patients to experience reflux, some abdominal discomfort, wind symptoms and possibly bad breath.

Endoscopic Sleeve Gastroplasty

Endoscopic sleeve Gastroplasty (ESG) is an incisionless surgical procedure that uses an endoscope to reduce gastric volume by perhaps 50-60 % and to change the way it functions. To date, volumetric studies of actual stomach size have not been done, but the procedure works not just by reducing stomach size but by petitioning the stomach into a slowly emptying upper part, and a normally functioning lower part.

In some respects, the name Endoscopic Sleeve Gastroplasty is a bit unfortunate, as it suggests that the ESG is similar to the surgical Sleeve Gastrectomy, which it is clearly not.

Current studies have shown that the ESG is effective at causing weight loss. The magnitude of weight loss is less than some surgical procedures, but it is certainly sufficient for many patients who may not otherwise consider themselves as candidates for a more permanent option. Studies have shown that people are able to lose on average about 15-20 % of their total body weight after 2 years. 1 in 5 patients will lose less than 10% of their total weight. Because it is a relatively new procedure, little information is available on its long-term effectiveness (more than two years) in causing weight loss, or on the long-term consequences of the procedure.



History of the ESG

This procedure is dependent on the Apollo Overstitch™ device, which allows us to place sutures from within the stomach. This device was originally developed in 2010 and has undergone several improvements which have improved reliability and ease of use. The ESG procedure was developed originally to be similar to a laparoscopic gastric plication, which is a bariatric surgical procedure that reduces stomach size by folding the stomach in on itself so that in the end it looks a bit like a stomach after a Laparoscopic Gastric Sleeve (LSG) procedure.

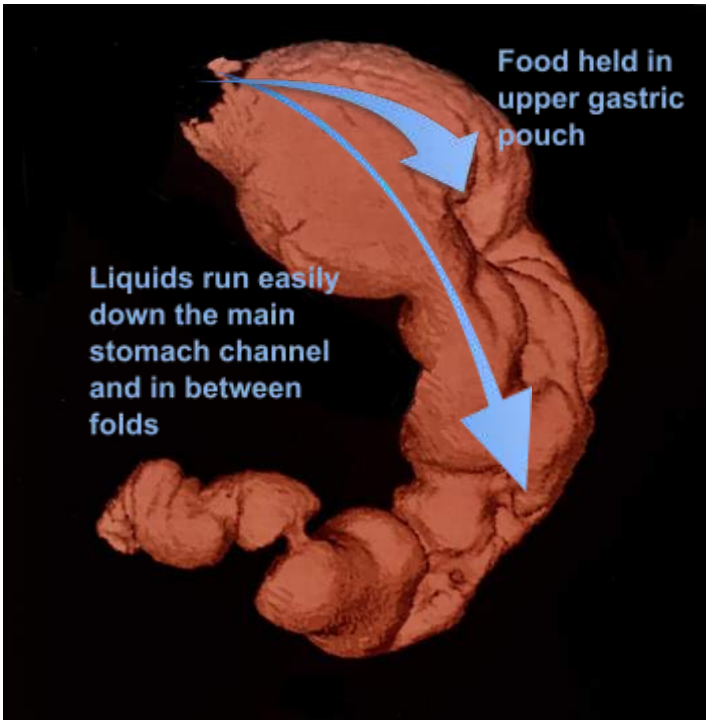
It quickly became apparent that it wasn't possible to make the stomach as small endoscopically as it is surgically and several different suture patterns were trialled over years to see what gives reasonable results. While it is likely that how we do the procedure will change over time, most people performing ESG currently suture the middle 2/3rds of the stomach which shortens it and reduces its volume.

How the ESG causes weight loss

The ESG itself does not make you lose weight. Rather, it is a tool to help restrict the amount of food you eat, by affecting your hunger, capacity and rate at which you consume food. Due to their smaller stomach size, patients find that after eating a much smaller quantity of food than usual they have a feeling of satisfaction (satiation) or a feeling that they have eaten enough. Furthermore, it seems that solid food leaves the stomach more slowly which helps prolong appetite suppression between meals. If a patient uses their operation to eat healthy (low-energy) meals three times a day, they will use more energy than they consume and will lose weight.

3D CT of the post ESG Stomach.

The distensible fundus (upper part) of the ESG stomach 'traps' food which trickles slowly down the main stomach channel, whereas liquids move more quickly through the main channel and also in between folds of stomach created by the sutures.



Effectiveness of the ESG in causing weight loss

Studies have shown that after ESG, people experience 14-20 % weight loss out to about 2 years. We know that the stomach will stretch and that the sutures have a tendency to fall out over time, so it is highly likely that patients having this procedure will need to be very dependent on permanent lifestyle change in order to maintain their weight loss. The effectiveness of the procedure will be less than after a surgical weight loss surgery procedure. One other difference between surgical procedures and endoscopic ones is that the early weight loss is more reliant on lifestyle change in endoscopic procedures. Most studies on surgical weight loss indicate that early dietary changes, exercise and other medical therapies have minimal effect on weight loss but a great effect on safety and prevention of weight gain, but with endoscopic procedures it seems that early uptake of a specific diet plan, exercise and consideration of adjuvant medical therapy (weight-loss drugs) is very important if maximum effectiveness is to be obtained from the procedure.

While it is impossible to determine how much weight an individual will lose after the procedure, most patients should aim to lose about 50% of the weight they wish to lose in the first three months, and if they don't look like they are going to achieve this then extra steps should be taken to maximise weight loss before the stomach 'softens up'.

Improvements to health

Weight loss resulting from a ESG has been shown to improve sleep apnoea, joint pain, mobility, reduce diabetes medications and medications for blood pressure and other weight related conditions. While it is important that patients add a multivitamin to their medication regimen it seems that this is a small price to pay for the health improvements that weight loss brings.

Suitable candidates for ESG

As with all obesity procedures the ESG should only be performed on patients who carry sufficient extra weight that weight loss will improve their health and quality of life. In general a BMI of 30-40 is the ‘sweet-spot’ where the ESG seems to perform well. Lighter patients will need to have medical or significant functional problems to justify the procedure. ‘Cosmetic’ weight loss procedures virtually always end up disappointing the patient who is undertaking them, as their expectations of the procedure are virtually never met or sustained. It is uncommon for patients to get to or maintain a BMI under 25, even with our largest bariatric surgical procedures because most patients find the lifestyle changes they have to take on to maintain this degree of weight loss too intrusive upon their day to day activities. Patients with a BMI much over 40 may find that the lesser power of the ESG (compared with surgery) and the risks of weight gain could lead to them being disappointed by the eventual result.

They should have tried other weight loss therapies beforehand but been unable to keep the weight off. Patients with eating disorders such as binge eating or nocturnal eating disorder, and patients who habitually graze or emotionally eat, need to seek treatments for these disorders as well, otherwise the surgery will fail after being initially successful.

The ESG is partly reversible and could be repeated in future. Other bariatric surgical procedures are still possible, albeit at an increased risk.

Finally, women who wish to fall pregnant soon after their surgery should be discouraged from doing so until their weight has stabilised, and any nutritional deficiencies have been identified and treated.

Complications

The ESG requires sutures to be passed through the full thickness of the stomach at multiple points before these sutures are tied to pull the stomach wall together at multiple points. The procedure has several risks, and even though care is taken to minimise these risks, we do know that these complications will occur to some people.

Anaesthetic risks. The procedure takes about an hour and requires a full general anaesthetic. While nausea and other mild anaesthetic effects are common, more serious anaesthetic complications with potential life threatening consequences will occur in about 1:10000 people.

Surgical risks. The risk of minor complications such as abdominal pain, difficulty drinking, bloating and other adverse symptoms is quite common, more serious complications occur less frequently. Major complications are about as common as they are with bariatric surgical procedures and occur in about 1-2% of patients. These complications include bleeding, intra-abdominal abscess and injury to structures around the stomach.

Other serious complications stem from the formation of blood clots in the veins (1 in 100 cases), including deep venous thrombosis (1 in 200) or pulmonary embolism (1 in 1000), but these risks are reduced by using blood-thinning medications during surgery and wearing compression stockings.

Vitamin and mineral deficiencies are unlikely to be severe after an ESG, but if a person eats food that is insufficiently nutritious, or if they vomit often, nutritional deficiencies can occur. Untreated deficiencies can lead to severe complications. We recommend daily multivitamins, blood tests one or two times per year, and bone density scans every one to three years.

Choosing the ESG over other options

There are many different weight loss procedures and other types of treatments available. Before choosing ESG or any other surgery you need to think very hard about whether this particular treatment is the best one for you. The risks of having the ESG must be balanced against the risks of continuing in your current state of health. Different people, with different lifestyles and health conditions, suit different operations. This section will help you to understand how these treatments differ and what is the best option for you. For additional information to help you make a well-informed, balanced decision, please see our other information booklets.

Generally, the ESG requires a short hospital stay of 1-2 days, and patients find it OK to return to work by about one-two weeks.

As the ESG is a new procedure, not all of its long-term effects are known, as opposed to the gastric sleeve, bypass and gastric band operations, which have been common for many years. For this reason, we do not yet know how likely a person is to regain weight years after ESG, or how many patients may require further surgery.

The ESG allows the average patient to lose 14-20% of their weight, which is similar to the amount of weight loss that patients lose with a gastric band. The band has a higher side effect profile but is likely to lead to less risk of weight regain than an ESG.

Lap Sleeve and Bypass allow patients to lose 25-35% of their total body weight on average, but have a higher side effect profile.

Before the procedure

The most important thing to do before deciding about ESG is to have a discussion with the surgeon about your weight problem and how it affects you. If you wish to undergo treatment for your weight, you should have an idea about what your goals are and whether these can be achieved by having this procedure. If the operation is unlikely to give you what you want, you should consider something else.

My goals:

Tests and consultations

After an initial consultation you will have some blood tests done, so we can assess your sugars, thyroid, blood count and vitamin levels. You will then need one or more further consultations, depending on how you feel. We should obtain approval from your general practitioner (GP), as they will wish to be involved in your post-operative care. Even if you are unsure about whether your GP supports your decision to have weight loss surgery, you should discuss it with them first. Patients with a good support team do the best, and a GP, spouse/partner, friends and family who are all supportive are invaluable. Patients who choose to go it alone will not fare so well.

We will talk about your dieting history and assess any medical problems you have. Some medical problems may require further assessment and treatment to make you as fit as possible before your operation. In general I prefer a patient to have at least two consultations with me or my colleagues prior to surgery.

After we have booked a date for your surgery you will need to go on a very low calorie diet for 2–4 weeks before the operation. During this time you should lose about 2–4 kg per week.

Very low calorie diet

The very low calorie diet consists of three liquid meal replacements per day. This gives your body the minimum energy it needs but has all the nutrition of a balanced diet: macronutrients (carbohydrates, protein, essential fat) and micronutrients (vitamins and minerals). Suitable brands include Optifast, Slimfast, Tony Ferguson etc and are available from your local chemist. We will give you instructions about other foods to consume with the program.

Purpose of the diet

There are three benefits to the pre-operative diet:

- Most of the fat tissue you lose first with these diets comes off your liver and from around your internal organs. Losing this fat makes the operation faster, safer, and significantly less painful. Weight loss of just 10 per cent leads to a reduction in medical risks of 50 per cent and significantly improves your fitness, which aids in recovery.
- Weight loss reduces the severity of weight-related illness very quickly. This makes the anaesthetic safer.
- The diet will accustom you to the post-operative liquid diet. Having this diet before the operation allows you to find low-calorie drinks you like while you're in a less stressful situation.

Choice of diet drinks

If you don't like a particular diet drink, try a different brand or switch to milkshakes, soups, bars or desserts. In general the brands with the greatest range of flavours seem to be more popular. If you cannot find something you can tolerate, you should discuss other short-term or rapid weight loss options with our dietitian.

Seeing a dietitian

You need to see a dietitian before the surgery. Changing how you eat is central to weight loss, and often people can be confused by the different advice they have received in the past. A dietitian is available to see you before and after the operation, and most people get significant benefit from seeing her. A dietitian can help you set and work towards weight loss goals through meal planning, education on the right eating practices, portion control and exercise.

Who else should I see before surgery?

You need to get the go-ahead from your GP before the operation, to ensure your body is healthy enough for the strain of the operation and beyond.

A psychologist is available if you find you have issues that need to be tackled, so don't be afraid to ask. If you have had any psychological illness in the past you will need to let us know, and discuss your decision to have surgery with the person who helps manage this condition. Having surgery is stressful and also may change your requirement for some of your regular antidepressants etc.

Smoking

You should quit smoking before you undergo any surgery, particularly obesity surgery, as smoking increases your risk of blood clots and other complications. At the least, you should stop smoking several weeks before surgery.

The ESG

On the day of the operation you should eat and drink nothing for six hours before your scheduled operation time, and you will have to have had fluids only the day before the procedure. If there is food in your stomach we will likely have to cancel the procedure.

Some waiting in hospital is to be expected.

You can take your normal medications with a sip of water at the normal time, but you will need to stop strong blood-thinning medications (Plavix, Asasantin, Warfarin etc.) 7–10 days beforehand. Most diabetes medications can usually be taken, but often at half your usual dose, while it is usually best to stop taking Metformin 48 hours before the operation.

You should have had some contact with your anaesthetist before the operation, although you probably won't meet them until you have been admitted to hospital. A drip will be put into your arm to give you medications and then you will be wheeled into the operating room. You will see a lot of people bustling around, but don't be concerned, as they are all there to help you.

After the operation

Immediately after the operation you will find that you have no hunger. A couple of mouthfuls of liquid or yoghurt will be enough to make you feel satisfied and able to stop eating. This feeling changes over days or weeks as bruising around the stomach slowly settles.

Hospital stay

About 90 per cent of patients go home 1-2 days after surgery. At this point you will get instructions about what to eat and drink.

After the hospital

At 2–3 weeks after the procedure you will have a follow-up appointment, where we will discuss how you are feeling, any complications you may be having and your eating habits.

Going back to work

It depends on how you feel, and your circumstances, but most people go to work 2–4 weeks after their surgery.

What will be different after my ESG?

Food habits

Amount

Our modern perceptions about much food we need to eat to be healthy are incorrect. Most of us have greater access to food than at any other time in history, and virtually everyone you know overeats most of the time. It is extremely unlikely for someone to starve or become malnourished with a ESG, but you will have to work hard to manage your own and other people's expectations about how much you should eat. This is the hardest thing that you will have to do, but it is also the most important. If you or others believe that you 'must' eat more food then you will simply not lose weight, or will fall well short of your goals. Eating less food may mean you miss out on extra calcium, iron, folate, fibre or other substances, but these can easily be mixed in with the diet or supplemented.

Studies of people who have lost weight (by any method) show that successful **maintenance** of lost weight is usually achieved by those who:

- consume 1000–1300 calories a day
- exercise enough to burn off 300 calories a day (in effect giving them a daily intake closer to 1000 calories)

- consume a controlled diet with restricted food choices (they say ‘no’ a lot)
- realise that weight loss is precious, and weight regain difficult to recover from.

Having an operation to lose weight doesn’t change the way you lose weight it only makes it easier because your capacity and appetite are smaller. If someone maintaining their weight is having approximately 1000 calories a day, then to lose weight they probably need to eat less than this or do a significant amount of vigorous exercise. It appears that many people losing weight probably eat about 600–800 calories per day.

Frequency

Don’t believe the slogan that we need to ‘eat little and often’. People with weight problems can manage the ‘often’ but not the ‘little’. Managing portion control is extremely difficult at the best of times, and if you expose yourself to many eating opportunities during the day you will simply expose yourself to more opportunities to make an error. Unfortunately you cannot ‘prime’ or stimulate your metabolism in any way other than with exercise, and more unfortunately, you will find that as you lose more and more weight, your body will try harder and harder to fight you by hanging on as hard as it can to every calorie you eat. This will have the effect of making your body more efficient or, in effect, ‘slowing your metabolism’.

Breakfast

A lot of people who have had surgery do not feel like eating breakfast. If you are not hungry in the morning, try to alter your habits so you have your first meal when you actually want it. For a lot of people this is late morning, in which case they have breakfast while others are having morning tea. Another alternative is to combine this meal with lunch (brunch). Then you can have a snack, such as a piece of fruit, for afternoon tea to tide you over to dinnertime. You should base your meal patterns in the morning on your hunger and routine rather than on tradition. Eating something to stop you from feeling hungry later won’t usually work.

Lunch

Lunch should, for most people be an uncomplicated and predictable routine (like breakfast). At work you need strategies to deal with predictable and repeated difficult situations such as cafeterias, lunch trolleys, vending machines and other ‘fast foods’. The portion sizes will be hopelessly inappropriate for you, and you will need to either bring food with you (diet drinks and soups are very good for this), plan what to buy before you look at the menu, or be prepared to throw out the some of the food (for example, you should have only half a deli sandwich, or less if it is large). If you do not finish what you order, throw it out or you will end up grazing on it later.

Snacks

Morning and afternoon tea are other significant sources of empty calories. If you find yourself unable to resist snacking at this time, you should plan for it and bring an apple. A fundamental lesson about snack foods that you should learn early is that you will most likely eat every scrap of it if it is put in front of you and you are bored. You should treat these foods as though they were subject to smoking laws, that is, sometimes people have them but they don’t get consumed inside the house. Snack foods are potentially as dangerous to children as cigarettes, so they will also benefit from being shielded from them. Try not to have them in the house.

Dinner

For most of us, dinner is the most important meal of the day. Your other meals should be controlled, boring, and basically designed to keep you healthy but losing weight. At dinnertime you will be sitting down with your family or out with friends, and you should not miss out on the important social and relationship aspects of eating. Your family will be watching what you eat and how you eat it. If you are trying to make up for excess consumption during the day by munching on a celery stick they will not be impressed. It is important that you are able to eat some of the same things that others are eating, otherwise the extra effort required to produce a separatespecial meal for yourself will eventually become unmanageable. One way to make this meal work is to serve yourself food on a bread-and-butter plate, allowing only a tablespoon or so of each portion and leaving space on the plate between each item. Serve fruit for dessert if you cannot break the habit of having something afterwards.

Supper

The after-dinner desire to graze is a tough thing to beat. Often boredom rather than hunger is involved. Try going for a walk or reading a book rather than watching TV or sitting at the computer. People with night-eating disorder eat in response to the stimulation offered by devices like the TV or computer and will struggle with their weight unless they learn to turn them off earlier in the evening.

Alcohol

Alcoholic beverages are very high in calories. If you drink more than a couple of drinks you will completely negate any good work done during the day. Alcohol is an appetite stimulant and drinking will disinhibit you and make you more likely to eat high-calorie snacks, so a ‘big night’ once a week or a couple of nights having a couple of drinks will probably stop you losing any weight at all. Try having a large diet drink or soda water before any alcoholic drinks at home or at social events and this will stop you from drinking alcohol quickly because you feel thirsty. If you drink more than a couple of alcoholic drinks more than a couple of times a week, it’s unlikely that you will lose as much weight as you wish too.

Food choice

The ESG will suppress your hunger, and slow you down, but it won’t force you not to eat. Any operation that forces you to stop eating (such as jaw wiring) will fail, as it will not allow you to live and function as a normal person.

It is important to try to control the times that you eat, the speed at which you eat and the types of food.

Drinks at mealtime

You should drink before rather than after you eat. Drinking after food will wash the food through and allow you to eat faster than you should. The faster and longer you eat, the more you will consume with the risk of defeating your surgery. Drinking before you eat will suppress your hunger and make it easier to swallow lumpier things.

Timing

Our modern eating habits do not work well with a sleeve. You will soon find that you have difficulty eating ‘on the run’ for a while. Eating and drinking while walking, talking or driving need to become a thing of the past. This has three potential benefits:

1. It limits spontaneous or ‘empty’ eating between meals.
2. It encourages planning of meal size and composition.
3. It encourages you to take part in the important ritual of sitting down and having a meal.

As you will often have a reasonable routine during the day you should plan your eating in a predictable way rather than just letting it happen.

Speed

You will find that the speed of your eating slows. You should use this slow pace to help you savour your food rather than aiming to eat large portions. Because it takes a longer time to eat, you can use a ‘stopwatch’ method for choosing how much to eat rather than finishing everything on the plate. Once 20 minutes have passed or others at the table have stopped eating, you could use this as a cue to stop yourself. Do not save the rest of the food for later.

Food types

This is not a diet. You do not need to eat special foods, although many people substitute some meals with diet drinks or something similar for convenience.

You should plan to gradually vary the foods you buy and prepare at home, but there is no reason to move away from normal food. As your stomach recovers from surgery (over two years), you will find that eating some foods will become less difficult and you will need to pay attention to avoid overeating.

Some suggestions:

- Substitute wholegrain toast or rice cakes/dry crackers for white bread.

- Use herbs and spices for flavour and oil spray rather than butter.
- Avoid cream or butter sauces, and use tomato sauces or other alternatives.
- Fish is often easier to prepare for meals than some red meats, although casseroles, mince and rissoles are usually fine.
- Lamb cutlets are also a reasonable meat choice if cooked lightly.
- Fruit may need to be peeled for a while, and some fibrous fresh foods may lose their appeal.

Sometimes having to plan your food is inconvenient, and if you don't have time to deal with this on a regular basis, you will have to avoid the trap of eating pre-prepared or fast foods, as they normally have two to three times the calories and salt than something made at home. Obvious exceptions to this are Weight Watchers™ or other slimmers' meals that you can purchase to have available when food preparation is too onerous.

Diet and food intake

It is recommended that you eat small quantities of fluids/food at least four to five times a day for the first fourweeks after the operation. After six weeks, patients should aim to eat three small meals a day, usually 25 per cent of previous serves. You will be given advice about a fluid then soft diet to have until your stomach heals enough to eat solid food safely. Snacking and eating between meals will often not stop people from losing weight early on, but it always leads to weight regain later. Now is a good time to make a habit of avoiding milky coffees, snacks or anything containing calories between meals.

When going to a restaurant you can eat an entréesized meal and feel satisfied. Sweets and fatty foods are poorly tolerated and best avoided. If you do eventually learn how to tolerate these foods, you will put yourself at risk of weight gain.

The protein you will need in your diet can be found in foods like eggs, chicken, fish, meat and cheese. Protein supplements can be purchased cheaply if it's hard for you to get protein into your diet.

Carbohydrates are found in foods like rice, bread, pasta, macaroni and spaghetti. Weight loss patients should try to limit their carbohydrate intake.

What can I eat?
Most patients can eat anything after surgery, just remember to chew, chew, chew. Some patients cannot tolerate certain foods they ate before the operation. Each individual is different. If you try something and it does not agree with you, leave it and try again a couple of weeks later. It is recommended that patients stay on puréed foods for the first four to six weeks. Fresh vegetables, fruits and dry meats should be avoided during the first six weeks.

What if I eat too much?
You may get pain in the first few weeks after surgery, but if you continue to eat too much your stomach will stretch and the procedure will fail. This will also happen if you eat too quickly, or swallow poorly chewed foods.. Part of your recovery after surgery is learning what is enough for you. 'Enough' keeps you healthy and active; too much food will lead to weight regain.

Vitamins

Multivitamins (with folate and thiamine) are needed every day. Some people need iron, calcium and vitamin B12 as well, so blood tests for all of these should be taken on an ongoing basis.

You can purchase your vitamins from any supplier. Just make sure they are the same types of vitamins and the same quantity as recommended.

Some patients who stop taking these supplements will become unwell, especially if their diet is poor and they are vomiting. If untreated these vitamin deficiency illnesses can lead to permanent dementia, neurological injury, skin changes and other metabolic abnormalities. These are difficult to diagnose and may take time to correct. **Some vitamin deficiencies can lead to irreversible damage.** Vitamin supplements should be taken life-long after this operation.

Smoking and drinking

An occasional alcoholic drink is OK, although patients who drink regularly post-op will run into problems with weight gain and an increased risk of alcoholism. Alcohol is absorbed faster into the bloodstream after the operation, so there are risks if you drink and drive.

Sex and pregnancy

You can still conceive and have children after this surgery, barring other fertility problems. It is recommended that patients wait at least one year after the operation to get pregnant. You can have sex after surgery – usually after three weeks.

Skin sag

Whether you get skin sag or not depends on how much weight you have lost, how elastic your skin is, your age, and how long you have been overweight.

Exercise can help prevent hanging skin after weight loss, but if you lose an excessive amount of weight, more than likely you will have some hanging skin. Fewer than one in three patients choose to have excess skin removed after weight loss surgery.

Notes and questions